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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/737,125

12/15/2003

Highland Mary Mountain

42P18004

5942

8791

7590

12/05/2006

BLAKELY SOKOLOFF TAYLOR & ZAFMAN

12400 WILSHIRE BOULEVARD

SEVENTH FLOOR

LOS ANGELES, CA 90025-1030

EXAMINER

NEWAY, SAMUEL G

ART UNIT

PAPER NUMBER

2192

DATE MAILED: 12/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/737,125

Applicant(s)

MOUNTAIN, HIGHLAND MARY

Examiner

Samuel G. Neway

Art Unit

2192

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)                        | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. Claims 1 – 19 are pending and are considered below.

#### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1 – 2, 4 – 12, 15, 18 – 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Winsock Direct: The Value of System Area Networks (Jim Pinkerton, Microsoft Corporation, Microsoft Windows 2000 Server, May 2001) referred herein as Pinkerton .

#### Claim 1:

Pinkerton discloses a method comprising: programming a software development environment to reserve memory space (e.g. "application posts a buffer ...", page 6, 3<sup>rd</sup> bullet) for direct access by a remote direct memory process (e.g. Figure 1 and related text).

#### Claim 2:

Pinkerton discloses the method of claim 1 wherein the software development environment comprises a managed runtime environment (e.g. "Protocol Offload", page 8).

#### Claim 4:

Pinkerton discloses the method of claim 1 wherein said programming a software development environment comprises encoding a managed runtime environment to recognize memory space (e.g. "application posts a buffer ...", page 6) that is accessible by a remote direct memory program (e.g. Figure 1 and related text).

Claim 5:

Pinkerton discloses the method of claim 1 wherein said remote direct memory process comprises a network software memory program (e.g. "Protocol Offload", page 8).

Claim 6:

Pinkerton discloses the method of claim 5 wherein said remote direct memory process comprises an executable program that is enabled to operate by an operating system comprising a kernel, the kernel reserving memory space (e.g. "application posts a buffer ...", page 6) to be accessed by the operating system but being bypassed when the executable program of the remote direct memory process accesses the memory space (e.g. Figure 1 and related text).

Claim 7:

Pinkerton discloses a method comprising: encoding a software module to reserve memory space (e.g. "application posts a buffer ...") that allows a network software memory program to bypass a central processing unit to access the memory space, the network software memory program operating according to a remote direct memory access protocol (e.g. Figure 1 and related text).

Claim 8:

Pinkerton discloses the method of claim 7 wherein the software module comprises a managed runtime environment (e.g. "Protocol Offload", page 8).

Claim 9:

Pinkerton discloses the method of claim 7 wherein said encoding the software module comprises programming a managed runtime environment to recognize memory space that is accessible by a remote direct memory program (e.g. Figure 1 and related text).

Claim 10:

Pinkerton discloses a computer-readable medium having stored thereon at least one instruction that, when executed by a computer, causes the computer to perform: encoding of a managed run time environment to reserve memory space (e.g. "application posts a buffer ...") for direct access by a remote direct memory program (e.g. Figure 1 and related text).

Claim 11:

Pinkerton discloses the computer-readable medium of claim 10 wherein the managed runtime environment reserves memory space for direct access by a network software program (e.g. Figure 1 and related text).

Claim 12:

Pinkerton discloses the computer-readable medium of claim 10 wherein the computer-readable medium comprises a storage medium comprising an instruction set configured to provide communication between the managed runtime environment and the remote direct memory program (e.g. Figure 1 and related text).

Claim 15:

Pinkerton discloses an article comprising: a storage medium comprising machine-readable instructions stored thereon to encode a managed run time environment to reserve memory space (e.g. "application posts a buffer ...") for direct access by a software development environment (e.g. Figure 1 and related text).

Claim 18:

Pinkerton discloses the article of claim 15, wherein the storage medium comprises machine-readable instructions stored thereon to encode a software module to reserve memory space (e.g. "application posts a buffer ...") for direct access by the software development environment (e.g. Figure 1 and related text).

Claim 19:

Pinkerton discloses the article of claim 18, wherein the software development environment comprises a remote direct memory access environment (e.g. Figure 1 and related text).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 3, 13 – 14, and 16 – 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pinkerton in view of Microsoft Computer Dictionary (Fifth Edition, 2002).

Claims 3, 16:

Pinkerton discloses the method of claim 1 and the article of claim 15 but he does not explicitly disclose a garbage collector in the software development environment.

Microsoft Computer Dictionary, page 232, gives a well known definition of garbage collection as a process for automatic recovery of heap memory.

It would have been obvious to implement such a well known garbage collector into Pinkerton's system and/or method in order to free allocated but no longer used memory as a known desired feature in the art (Microsoft Computer Dictionary definition, page 232).

Claim 13:

Pinkerton discloses a system comprising: a processor; a memory coupled to the processor to support the processor operations; a network interface controller interoperating with the processor and the memory for network communications with at least another processor and another network interface controller ("CPU/memory architectures", page 7); a network library accessible by the processor that provides remote direct memory access capabilities; and a storage medium encoded to create a software development environment to reserve memory space for direct access by a remote direct memory program (e.g. Figure 1 and related text), but he does not explicitly disclose a garbage collector to monitor memory usage by at least the processor,

Microsoft Computer Dictionary, page 232, gives a well known definition of garbage collection as a process for automatic recovery of heap memory.

It would have been obvious to implement such a well known garbage collector into Pinkerton's system and/or method in order to free allocated but no longer used memory as a known desired feature in the art (Microsoft Computer Dictionary definition, page 232).

Claim 14:

Pinkerton and Microsoft Computer Dictionary, page 232, disclose the system of claim 13, Pinkerton further discloses wherein the storage medium comprises a software module encoded to reserve memory space for direct access by a network software memory program (e.g. Figure 1 and related text).

Claim 17:

Pinkerton and Microsoft Computer Dictionary, page 232, disclose the article of claim 16, wherein the software development environment comprises a remote direct memory access environment (e.g. Figure 1 and related text).

***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Fan et al. (USPGPub 2004/0047361) discloses a method and a system for TCP/IP using generic buffers for non-posting TCP applications.

Mohamed et al. discloses an I/O protocol for taking advantage of system area network functionality communicating via RDMA.



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Futral et al. (US Patent 6,317,799) discloses a method of programming a direct memory access engine from a destination, accessing data in the memory with the engine which is programmed by the destination.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samuel G. Neway whose telephone number is 571-270-1058. The examiner can normally be reached on Monday - Friday 8:30AM - 5:30PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q. Dam can be reached on 571-272-3695. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SN

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TUAN DAM  
SUPERVISORY PATENT EXAMINER